

WHAT IS CLAIMED IS:

1. A yarn core for winding yarn wherein a yarn string-up process is employed for attaching a yarn to the core to begin winding the yarn onto the core, the yarn core
- 5 comprising:
- a tubular core having an outboard end and an inboard end, a wall of the core having an outer surface and an inner surface with a thickness defined therebetween, a yarn start-up groove being formed in the outer surface of the core wall proximate the outboard end thereof, wherein the start-up groove comprises a generally V-shaped groove
- 10 formed in the outer surface of the core wall partway through the thickness thereof, the groove having opposing inboard and outboard walls wherein the inboard wall faces generally toward the outboard end of the core, the groove comprising:
- a relatively wide V-shaped lead-in groove extending circumferentially from a leading end to a trailing end thereof with respect to a rotation direction of
- 15 the core wall;
- a relatively narrow V-shaped clamping groove extending circumferentially from a leading end to a trailing end thereof with respect to the rotation direction of the core wall, the leading end of the clamping groove being located proximate the trailing end of the lead-in groove;
- 20 a V-shaped transition groove extending between the trailing end of the lead-in groove and the leading end of the clamping groove; and
- a yarn latch located in the transition groove, the yarn latch comprising a tapering protrusion projecting from the inboard wall of the groove generally in the rotation direction of the core wall and extending toward the outboard wall of the
- 25 groove partway across a width defined between the inboard and outboard walls, the yarn latch serving to snag a yarn led into the lead-in groove.
2. The yarn core of claim 1, wherein the inboard and outboard walls of the lead-in and transition grooves are depressed below the outer surface of the core wall while the yarn latch is substantially undepressed below the outer surface.

3. The yarn core of claim 1, wherein the lead-in groove in cross-section defines a radially outer portion having the inboard and outboard walls sloped relatively shallowly toward each other, and a radially inner portion having the inboard and outboard walls sloped relatively steeply toward each other and coming together at a bottom of the lead-in groove.

4. The yarn core of claim 3, wherein the transition groove in cross-section defines a radially outer portion having the inboard and outboard walls sloped relatively shallowly toward each other, and a radially inner portion having the inboard and outboard walls sloped relatively steeply toward each other and coming together at a bottom of the transition groove.

5. The yarn core of claim 1, wherein the yarn start-up groove extends about more than half the circumference of the core.

6. The yarn core of claim 5, wherein the lead-in groove extends about at least one-quarter of the circumference of the core.

7. The yarn core of claim 1, wherein the lead-in groove has a constant width except for a tapered portion at the leading end of the lead-in groove.

8. The yarn core of claim 7, wherein the clamping groove has a constant width along substantially the entire length thereof.

9. The yarn core of claim 1, wherein the yarn latch is formed by a first wall that extends from a bottom of the start-up groove radially outwardly to the outer surface of the core wall at an inclined angle and a second wall that intersects the first wall at a tip of the yarn latch and extends from the tip in a direction generally opposite to the rotation direction of the core and at an angle relative to a circumferential direction of the core and intersects with a third wall comprising the inboard wall of the start-up groove, a narrowing space being defined between the second and third walls in which the yarn is wedged during a string-up operation.

10. The yarn core of claim 9, wherein the third wall is inclined relative to a radial direction and is depressed below the outer surface of the core wall.

11. The yarn core of claim 10, wherein the second wall extends from the bottom of the start-up groove radially outwardly to the outer surface of the core wall.

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